

124853

S.N. 10/632,277

Date of Response: September 19, 2005

Date of Office Communication: September 2, 2005

Amendments to the Specification

Please replace paragraph 31 beginning on page 8 of the specification to read as follows:

[0031] In an alternative preferred method of forming a silver reflective layer 48 of Figure 2 via a chemical reduction from liquid phase, the reducing agent solution and silver amine complex solution are first mixed together prior to applying the solution to the surface of the etched smoothening layer 44. The applied mixed solution is then degassed by exposure to a vacuum as above. When the deposition is complete, the excess mixed solution is then removed from the scintillator material 24, thereby leaving a silver reflective layer 48 layer formed on the adhesion layer 46 covering the smoothening layer 44 and scintillator element surfaces 27, 31, 33. The scintillator elements 24 are then washed and dried.

Please replace paragraph 41 beginning on page 10 of the specification to read as follows:

[0041] Adhesion between silver and a silicone hard coating surface leveling layer (SHC) or an ultraviolet curable hardcoat (UVHC) was unsatisfactory while the silver layer was directly sputtered to surface leveling layer surface. To enhance interfacial adhesion, a plasma argon-etching step (Ar etch) was first applied to the surface leveling layer for 2 minutes at 0.5kV and 10 micron to clean the surface. Next, a 10-Angstrom thick layer of titanium was sputtered ( $1.5\text{kw}$   $1.5\text{kw}$  @  $90\text{cm/min}$  20 micron) onto the surface leveling layer as an adhesion enhancing interlayer prior to silver sputtering. A simple scotch tape test was performed for adhesion evaluation, and the corresponding results were listed in Table 1. As seen, with the procedure described above, adhesion between silver and the surface-leveling layer was greatly improved. The results also showed a minimal optical effect caused by the titanium adhesion interlayer.

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Please replace paragraph 45 beginning on page 12 of the specification to read as follows:

[00451] Referring now to Figure 4, the metallic layer 64 preferably is formed using a reducing agent and silver amine complex. The surfaces 27, 31, 33 of the scintillator array elements 24 are first covered with a smoothening coating 62. The reducing agent is then applied to the smoothening coating 62. The reducing agent may be an aqueous solution of glucose or an aqueous solution of Rochelle salt. The reducing agent is degassed by exposure to a vacuum (not shown) to remove any bubbles between the scintillator elements 24. A layer of silver amine complex is then applied to the reducing agent. After deposition is complete, the liquid components of the reducing agent and silver amine complex are removed, leaving the metallic reflective layer 64 applied onto the smoothening layer 62. The scintillator elements 24 having the reflective material 36 are then washed and dried.